

CLAIMS

1. A microscope electronic camera provided to a microscope at least having an objective lens, an optical path split prism for splitting an optical image from the objective lens, an eyepiece lens for introducing one of optical images split by the optical path split prism, the microscope electronic camera comprising:

an imaging element for imaging the other one of the optical images split by the optical path split prism;

a signal processing section for processing an imaging signal output from the imaging element;

memory means for storing image data based on the imaging signal processed by the signal processing section;

display means located near the eyepiece lens, for displaying the image based on the imaging signal processed by the signal processing section; and

a casing integrally containing all of the imaging element, the signal processing section, the memory means, and the display means.

2. The microscope electronic camera according to claim 1, wherein the display means comprise an LCD monitor.

3. The microscope electronic camera according to claim 1, wherein the display means is arranged in the

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casing such that a display face thereof is inclined toward the eyepiece lens.

4. The microscope electronic camera according to claim 1, wherein the memory means comprise means from which a recording medium for storing the image data is attached and detached from the casing.

5. The microscope electronic camera according to claim 1, wherein the microscope includes:

a light source and an objective lens which are arranged to have a predetermined positional relationship with a specimen;

a lens barrel;

an optical path split prism located in the lens barrel, for splitting the optical image from the objective lens; and

an eyepiece lens for introducing the one of the optical images split by the optical path split prism.

6. The microscope electronic camera according to claim 1, wherein the light source comprise a transmission light source for irradiating the specimen with transmission light, and a reflection light source for irradiating the specimen with reflection light.

7. The microscope electronic camera according to claim 1, wherein a positional relationship between the eyepiece lens and the display means is set as shown below

angle X = 25° - 70°

$$\text{angle } Y = 20^{\circ} - 60^{\circ}$$

$$\text{angle } Z = 180^{\circ} - (X+Y)^{\circ}$$

where, in a triangle formed by connecting a first cross point at which an optical axis of the eyepiece lens crosses an axis perpendicular to a display face of the display means, a second cross point at which the display face of the display means crosses the axis, and an eyepiece point of the eyepiece lens, the angle X is formed by the optical axis of the eyepiece lens and the axis perpendicular to the display face of the display means, the angle Y is formed by the axis perpendicular to the display face of the display means and a line connecting the eyepiece point of the eyepiece lens and the second cross point in the display means, and the angle Z is formed by the optical axis of the eyepiece lens and a line connecting the eyepiece point of the eyepiece lens and the second cross point in the display means.

8. The microscope electronic camera according to claim 1, further comprising recognizing means for, when a setting of the observation condition in the microscope is changed, recognizing information the setting of which is changed, wherein the signal processing means comprise means for processing an image signal output from the imaging element in accordance with information sent from the recognizing means.

9. The microscope electronic camera according to

claim 8, wherein the recognizing means comprise color
temperature detection means for detecting color
temperature of illumination irradiating the specimen,
and the signal processing means comprise means for
5 changing a gain of the image signal in accordance with
the color temperature detection information detected by
the color temperature detection means.

10. The microscope electronic camera according to
claim 8, wherein the recognizing means comprise means
10 for information of at least one of change of the
observation magnification and change of the specimen,
the signal processing means comprise means for changing
filter coefficient suitable for accentuating a contour
of an image of the image signal in accordance with the
15 information obtained by the means.

11. The microscope electronic camera according to
claim 8, wherein the recognizing means comprise means
for obtaining information of change of an observation
method, the signal processing means comprise means for
20 changing a tone level of the image signal in accordance
with the observation method change information obtained
by the means.

12. A microscope electronic camera which is
provided to a microscope having a function of changing
25 a setting of the observation condition of the specimen,
and obtains images an observation image of the specimen
with use of the imaging element, the microscope

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electronic camera comprising:

recognizing means for, when setting of the
observation condition in the microscope is changed,
recognizing the information the setting of which is
5 changed, and

signal processing means for processing an image
signal output from the imaging element in accordance
with information sent from the recognizing means.

13. The microscope electronic camera according to
10 claim 12, wherein the recognizing means comprise color
temperature detection means for detecting color
temperature of illumination irradiating the specimen,
and the signal processing means comprise means for
changing gain of the image signal in accordance with
15 the color temperature detection information detected by
the color temperature detection means.

14. The microscope electronic camera according to
claim 12, wherein the recognizing means comprise means
for obtaining information of at least one of change
20 of the observation magnification and change of the
specimen, the signal processing means comprise means
for changing filter coefficient effective for
accentuating a contour of an image of the image signal
in accordance with information obtained by the means.

25 15. The microscope electronic camera according to
claim 12, wherein the recognizing means comprise means
for obtaining observation method change information,

the signal processing means comprise means for changing a tone level of the image signal in accordance with the observation method change information obtained by the means.

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